22 Magazine St # 1
Cambridge, MA 02139
pragun.goyal@gmail.com
http://pragungoyal.com
February, 2016

Pragun Goyal

Objective

To find interesting problems and to build beautifully engineered solutions for them.

Education

MS in Media Arts and Sciences, September 2014

Massachusetts Institute of Technology

Advisor: Prof. Joe Paradiso, Responsive Environments Group [MIT Media Lab]

B.Tech in Computer Science & Engineering, 2010

Indian Institute of Technology (IIT) Delhi

Experience

Systems Engineer | October 2014 - Ongoing | Cambridge, MA
Portal Instruments Inc.

- Co-invented a methodology and device to increase the effectiveness of skin penetration for needle free injections
- Designed and developed a high speed X-Ray imaging system to image in-vivo needle free injections
- Designed and developed a prototype for a control system to control a Brushless DC motor based needle-free injection system
- Designed and developed a system to collect and analyze data generated across multiple measurement instruments in lab experiments

electromechanical design and prototyping, CNC machining, electromechanical test setup design and development, software design and development, embedded systems, LabView, Python

Visiting Teacher | January 2015 - Ongoing | Cambridge, MA
Buckingham Browne and Nichols Middle School

Developing and teaching a curriculum to teach hands-on electronic design, programming for middle school students

Research Assistant | September 2012 - August 2014 | Cambridge, MA
Responsive Environments, MIT Media lab

Developed two smart hand tools that enable the use of CAD in hand fabrication.

concept and object design, digital modeling and fabrication, mechanical design, electronic design, signal processing, estimation, software development, embedded systems, video documentation

Co-founder, Developer | November 2011 – August 2012 | New Delhi, Cambridge
Inplore software Inc.

Developed the core backend for a decentralized personal data search engine

software architecture and development, business plan development

Biodesign Intern, Co-founder: Sohum | April 2011 – March 2012 | New Delhi, India
Stanford India Biodesign, All India Institute of Medical Sciences (AIIMS)

Designed the analog front end, signal acquisition and electronics for a Auditory Brainstem Response (ABR) based newborn hearing impairment (HI) screening device.

electronic design, embedded systems

Research Associate | January 2011 - March 2011 | New Delhi, India
Advanced Computer Networks Lab, Computer Science and Engineering, IIT Delhi
Designed, prototyped and validated an inertial pedestrian dead reckoning system
signal processing, estimation

Research Assistant | July 2009 - December 2009 | Pittsburgh, PA
Field Robotics Center, Robotics Institute, Carnegie Mellon University
Developed controls and positioning system software for indoor and outdoor robots
embedded systems, signal processing, estimation

Intern | May 2009 – July 2009, May 2010 – July 2010 | Bangalore, India
Beceem Communications Pvt. Ltd.
Developed Linux kernel support for automated testing of WiMax base-stations
software development, linux kernel hacking

Publications

Pragun Goyal, Joseph A. Paradiso and Pattie Maes. 2014. "Nishanchi: CAD for hand-fabrication". Submitted to UIST 2014 Demonstrations

Zoran, Amit, Roy Shilkrot, Pragun Goyal, Pattie Maes and Joseph A. Paradiso. 2014. "The Wise Chisel: The Rise of the Smart Handheld Tool." IEEE Pervasive Computing 13(3):48-57 (2014)

Pragun Goyal, Harshit Agrawal, Joseph A. Paradiso and Pattie Maes. 2013. *"BoardLab: PCB as an interface to EDA software"*. Demonstrated at the 26th annual ACM symposium on User interface software and technology (UIST `13)

Pragun Goyal, Vinay Ribeiro, Huzur Saran and Anshul Kumar. 2011. *"Strap-Down Pedestrian Dead-Reckoning System".* Proceedings of the International Conference on Indoor Positioning and Indoor Navigation (IPIN) 2011, September 2011

Pragun Goyal, Apoorva Garg, Shantanu Kedia, Varun Garg, Anshul Mittal and M. Balakrishnan. 2009. "DISHA: An Indoor Navigation System for the Visually Challenged". Proceedings of the International Society for Augmentative and Alternative Communication (INAE-ISAAC), March 2009

Teaching Experience

Design Innovation Workshop | New Delhi, March 2012
Design for Sustainability, Mentor

Design Innovation Workshop | Bangalore, January 2013
Sensor Environments, Mentor

Design Innovation Workshop | Mumbai, January 2014
Fabrication Laboratory, Mentor

Media Lab Abu Dhabi Workshop | Abu Dhabi, February 2014
Sensors and networks, Mentor

NuVu Professional Development Workshop | Cambridge, June 2014
Electronics and prototyping, Mentor